WHAT IS CLAIMED IS:

1. A corneal topography analysis system comprising:

an input unit for inputting corneal curvature data; and

an analysis unit that determines plural indexes characterizing topography of the cornea based on the input corneal curvature data, the analysis unit further judges corneal topography from features inherent in predetermined classifications of corneal topography using the determined indexes and a neural network so as to judge at least one of normal cornea, myopic refractive surgery, hyperopic refractive surgery, corneal astigmatism, penetrating keratoplasty, keratoconus, keratoconus suspect, pellucid marginal degeneration, or other classification of corneal topography.

2. The corneal topography analysis system of claim 1, wherein the analysis unit assigns a probability to the at least one classification of corneal topography that has been judged.

3. The corneal topography analysis system

of claim 1, wherein the analysis unit grades the severity of keratoconus using one or more of the determined indexes.

4. The corneal topography analysis system of claim 1, further comprising a display unit for displaying results of judgments made by the analysis unit.

5. The corneal topography analysis system of claim 1, wherein the analysis unit judges keratoconus cases from similarity to keratoconus and from severity of keratoconus using the determined indexes and the neural network.

6. The corneal topography analysis system of claim 1, further comprising a corneal curvature measuring device comprising a Placido disk and an image taking device, and wherein the corneal curvature data is obtained by projecting Placido rings onto the cornea and taking a Placido ring image from a convex surface of the cornea.

7. The corneal topography analysis system of claim 6, wherein the input unit and analysis

unit operate independently of the corneal curvature measuring device so as to be operable for analysis of corneal topography data acquired by a plurality of systems, including systems using placido disk technology with different ring structures and non-placido disk technology for capturing corneal curvature data.

8. The corneal topography analysis system of claim 1, wherein the indexes found by said analysis unit include at least one of minimum keratometry value, area compensated surface regularity index, and corneal eccentricity index.

9. The corneal topography analysis system of claim 4, wherein said display unit graphically represents probabilities of the judged classifications of corneal topographies together with numerical values.

10. The corneal topography analysis system of claim 1, further comprising:

a measuring optical system that projects Placido rings onto the cornea and takes a Placido

ring image formed by the convex surface of the cornea; and

a computational unit that obtains the corneal curvature data based on the Placido ring image taken by the measuring optical system.

11. The corneal topography analysis system of claim 1, wherein said analysis unit includes means for converting the corneal curvature data entered from the input unit into a denser first data matrix by interpolation, removing high-frequency components from the data by frequency analysis, and converting obtained data into corneal curvature data in the form of a given second data matrix.

12. The corneal topography analysis system of claim 11, wherein said analysis unit removes the high-frequency components by fast Fourier transform (FFT) and smoothes the corneal curvature data.

13. The corneal topography analysis system of claim 11, wherein the corneal curvature data entered by the input unit is a polar coordinate

data matrix, and wherein said analysis unit converts the corneal curvature data into an orthogonal coordinate data matrix as the first data matrix, removes high-frequency components by two-dimensional FFT from the data, smoothes the obtained corneal curvature data by inverse FFT, and then converts the smoothed data into a polar coordinate data matrix as said second data matrix.

14. A corneal topography analysis system comprising:

an input unit for entering corneal curvature data;

a computational unit for converting the entered corneal curvature data into a denser first data matrix by interpolation, removing high-frequency components from resulting data by frequency analysis, and converting produced data into corneal curvature data in the form of a given second data matrix; and

an analysis unit for judging categories of corneal topographies based on the converted corneal curvature data.

15. The corneal topography analysis system of claim 14, further comprising a display unit for displaying results of judgments made by the analysis unit.

16. The corneal topography analysis system of claim 14, further comprising a corneal curvature measuring device comprising a Placido disk and an image taking device, and wherein the corneal curvature data is obtained by projecting Placido rings onto the cornea and taking a Placido ring image from a convex surface of the cornea.

17. The corneal topography analysis system of claim 14, wherein said computational unit removes the high-frequency components by fast Fourier transform (FFT) and smoothes the corneal curvature data.

18. The corneal topography analysis system of claim 14, wherein the corneal curvature data entered by the input unit is a polar coordinate data matrix, and wherein said computational unit converts the corneal curvature data into an orthogonal coordinate data matrix as the first

data matrix, removes high-frequency components by two-dimensional FFT from the data, smoothes the obtained corneal curvature data by inverse FFT, and then converts the smoothed data into a polar coordinate data matrix as said second data matrix.

19. The corneal topography analysis system of claim 14, further comprising:

a measuring optical system that projects Placido rings onto the cornea and takes a Placido ring image created by the convex surface of the cornea; and

a corneal curvature-calculating unit that obtains the corneal curvature data based on the Placido ring image taken by the measuring optical system.

20. A corneal topography analysis system comprising:

an input unit for inputting corneal curvature data;

an analysis unit that determines plural indexes characterizing topography of the cornea based on the input corneal curvature data, the

analysis unit further judges corneal topography from features inherent in predetermined classifications of corneal topography using the determined indexes so as to judge a plurality of classifications of corneal topography.

21. The corneal topography analysis system of claim 20, wherein the analysis unit judges the plurality of classifications of corneal topography using a neural network, and wherein the plurality of classifications are selected from the following: normal cornea, myopic refractive surgery, hyperopic refractive surgery, corneal astigmatism, penetrating keratoplasty, keratoconus, keratoconus suspect, pellucid and marginal degeneration.

22. The corneal topography analysis system of claim 20, wherein the input unit and analysis unit operate independently of the corneal curvature measuring device so as to be operable for analysis of corneal topography data acquired by a plurality of systems, including systems using placido disk technology with different ring

structures and non-placido disk technology for capturing corneal curvature data.

23. A method of analyzing corneal topography of a cornea comprising the steps of:

obtaining corneal curvature data;

determining plural indexes characterizing topography of the cornea based on the obtained corneal curvature data; and

judging corneal topography from features inherent in predetermined classifications of corneal topography using the determined indexes and a neural network so as to judge at least one of normal cornea, myopic refractive surgery, hyperopic refractive surgery, corneal astigmatism, penetrating keratoplasty, keratoconus, keratoconus suspect, pellucid marginal degeneration, or other classification of corneal topography.

24. The method of claim 23, wherein the step of judging corneal topography includes judging keratoconus cases from similarity to keratoconus and from severity of keratoconus using the found indexes and the use of a neural network.

25. A method of analyzing corneal topography of a cornea comprising the steps of:

obtaining corneal curvature data;

converting the entered corneal curvature data into a denser first data matrix by interpolation;

removing high-frequency components from resulting data by frequency analysis;

converting produced data into corneal curvature data in the form of a given second data matrix; and

judging categories of corneal cases based on the converted corneal curvature data.